

Recall the problem in **task1**, which we used to view a single image.

```
import nibabel as nib
import numpy as np

filePath = 'hippocampus_001.nii.gz'
img = nib.load(filePath)
data = img.get_fdata()

slice = data[:, :, 20]

import matplotlib.pyplot as plt

plt.imshow(slice)
plt.show()
```

Remember that MRI scans are 3D scans. If you use **data.shape** you will get the dimensions of the scan in the x, y and z axis. Which is **(35,51,35)**

What does this mean? This means that the scan has 35 slices along x axis, 51 values along y axis and 35 values along z axis.

So lets modify our code so that we display the first slices along each axis.

```
slice1 = data[0, :, :]
slice2 = data[:, 0, :]
slice3 = data[:, :, 0]
```

Here slice1, slice2 and slice3 are respectively the slices along the three axes x,y and z.

You can experiment more by changing the values of the indices (i.e. changing the value where 0 is located).

Plot the images to get an idea about the scan:

```
plt.imshow(slice1)
plt.show()

plt.imshow(slice2)
plt.show()

plt.imshow(slice2)
plt.show()
```

Experiment with different images and image sizes to get an idea about the 3D properties of the scan. In the next experiment we will only be using a single slice to process our image.